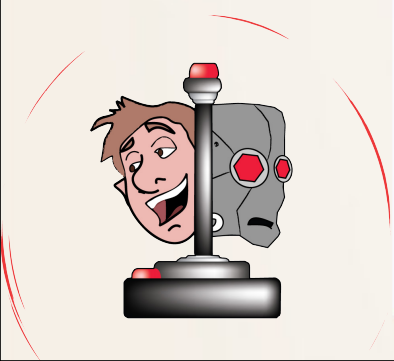


The Science and Art of Storytelling

Mark Riedl

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**Georgia
Tech**

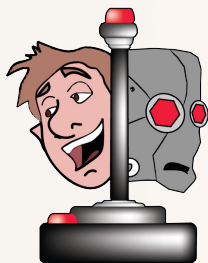


**College of
Computing**

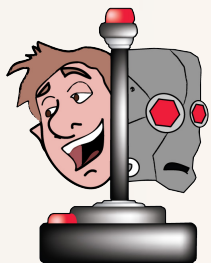
School of Interactive Computing

Storytelling

- Storytelling is pervasive part of the human experience
 - Books, movies, computer games, training scenarios, education, every-day communication, etc.
- Narrative is a fundamental means by which we organize, understand, and explain the world
- Can you be a more effective communicator by being an effective storyteller?

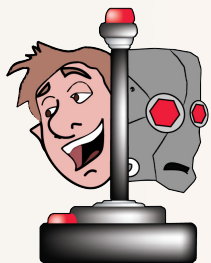


A bit of background



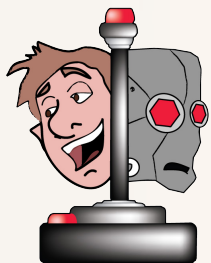
A bit of background

- I am a computer scientist



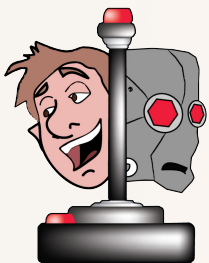
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- I am a computer scientist
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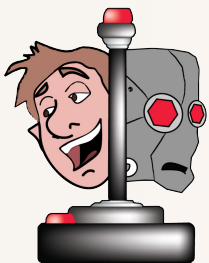
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- I study artificial intelligence
- The strong story hypothesis



A bit of background

- I am a computer scientist
- I study artificial intelligence
- The strong story hypothesis
- Instill computational systems with the ability to craft and tell novel stories in order to be better entertainers, educators, trainers, communicators, and, generally more capable of relating to humans



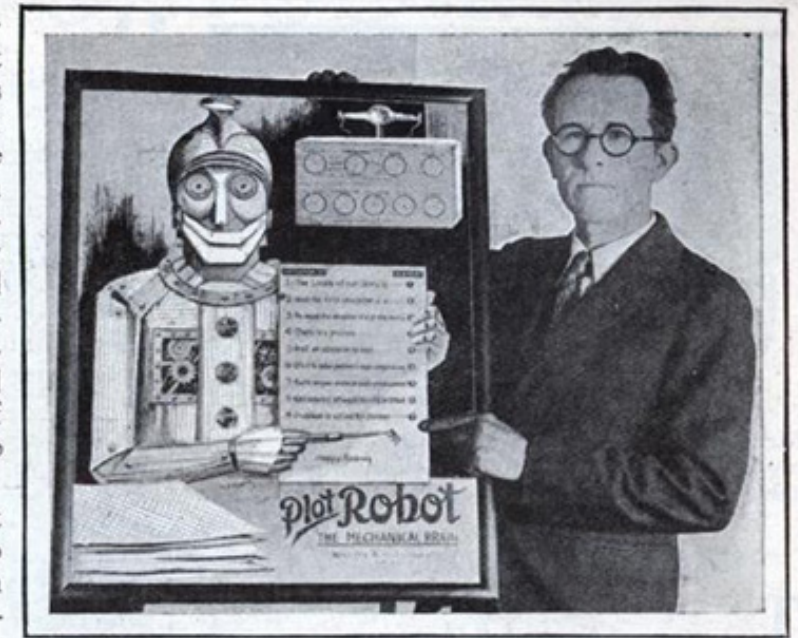
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Robot With Mechanical Brain Thinks Up Story Plots

FORMERLY robots were merely mechanical devices that could perform a variety of stunts under the guidance of a human being, but now a robot has made its appearance that thinks, has a soul of a kind, creative imagination, and other qualities necessary for writing a modern stereotyped short story. This robot, the invention of Wycliffe Hill, a Los Angeles scenario writer, is declared to be able to build up millions of plots, no two alike, for magazine stories or movie plays.

Mr. Hill has equipped his robot with an index chart, divided into eight sections, one devoted to each of the eight elements of a story—background, character, obstacle, problem, predicament, complication, crisis and climax—and with an assortment of variations. The robot selects the material as required from this inexhaustible source and builds plots that could never be imagined by the author

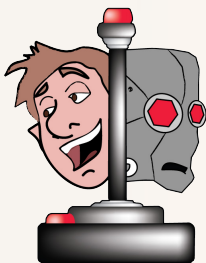


Mr. Wycliffe Hill demonstrating his new story writing robot, which can think up any kind of plot with its mechanical brains.

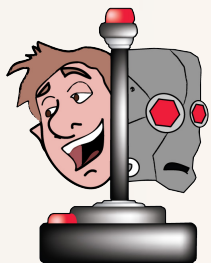
without the aid of the mechanical brain. Now if you want to become a successful author simply obtain a robot and put it to work.

© Popular Mechanics, 1931

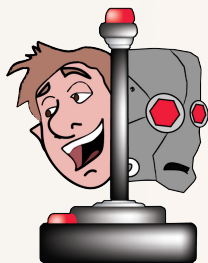
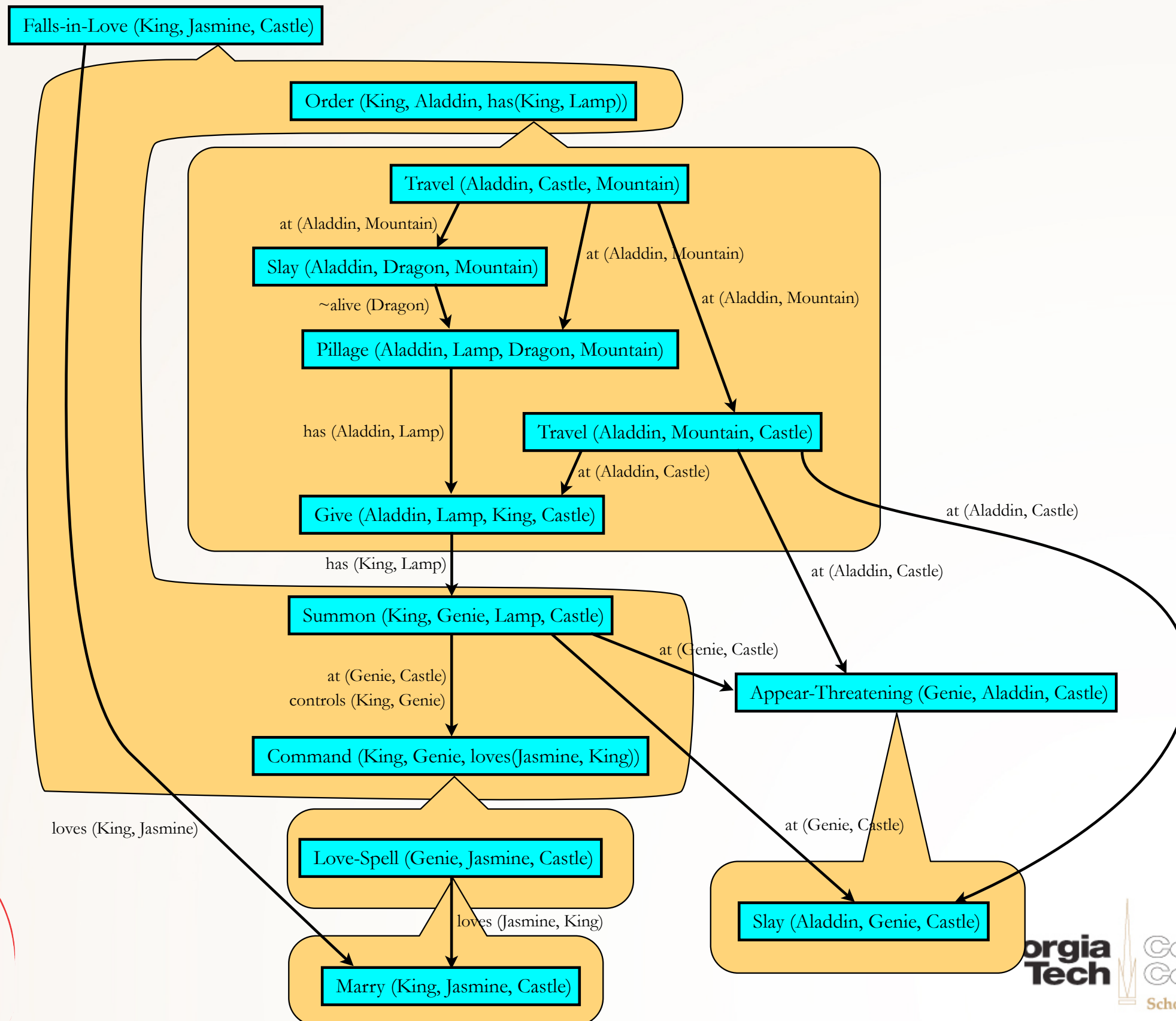
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Story generation



Story generation



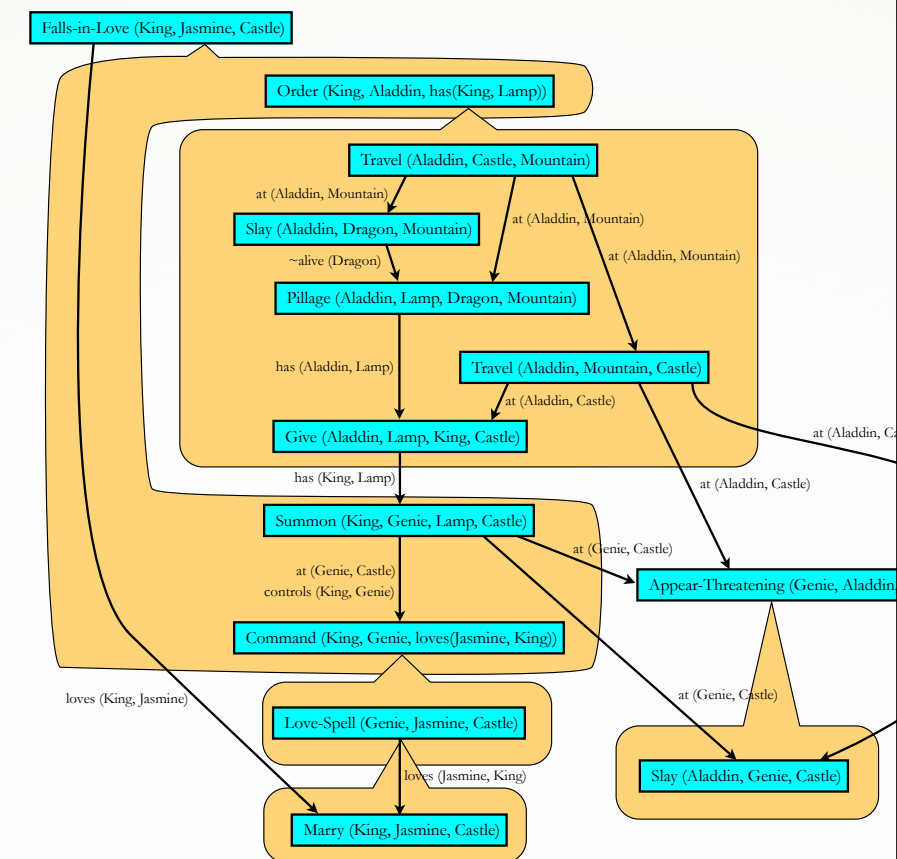
Story generation

There is a woman named Jasmine. There is a king named Jafar. This is a story about how King Jafar becomes married to Jasmine. There is a magic genie. This is also a story about how the genie dies.

There is a magic lamp. There is a dragon. The dragon has the magic lamp. The genie is confined within the magic lamp.

King Jafar is not married. Jasmine is very beautiful. King Jafar sees Jasmine and instantly falls in love with her. King Jafar wants to marry Jasmine. There is a brave knight named Aladdin. Aladdin is loyal to the death to King Jafar. King Jafar orders Aladdin to get the magic lamp for him. Aladdin wants King Jafar to have the magic lamp. Aladdin travels from the castle to the mountains. Aladdin slays the dragon. The dragon is dead. Aladdin takes the magic lamp from the dead body of the dragon. Aladdin travels from the mountains to the castle. Aladdin hands the magic lamp to King Jafar. The genie is in the magic lamp. King Jafar rubs the magic lamp and summons the genie out of it. The genie is not confined within the magic lamp. King Jafar controls the genie with the magic lamp. King Jafar uses the magic lamp to command the genie to make Jasmine love him. The genie wants Jasmine to be in love with King Jafar. The genie casts a spell on Jasmine making her fall in love with King Jafar. Jasmine is madly in love with King Jafar. Jasmine wants to marry King Jafar. The genie has a frightening appearance. The genie appears threatening to Aladdin. Aladdin wants the genie to die. Aladdin slays the genie. King Jafar and Jasmine wed in an extravagant ceremony.

The genie is dead. King Jafar and Jasmine are married. The end.

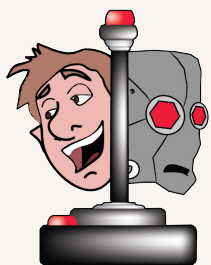


Interactive narrative

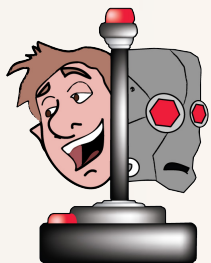
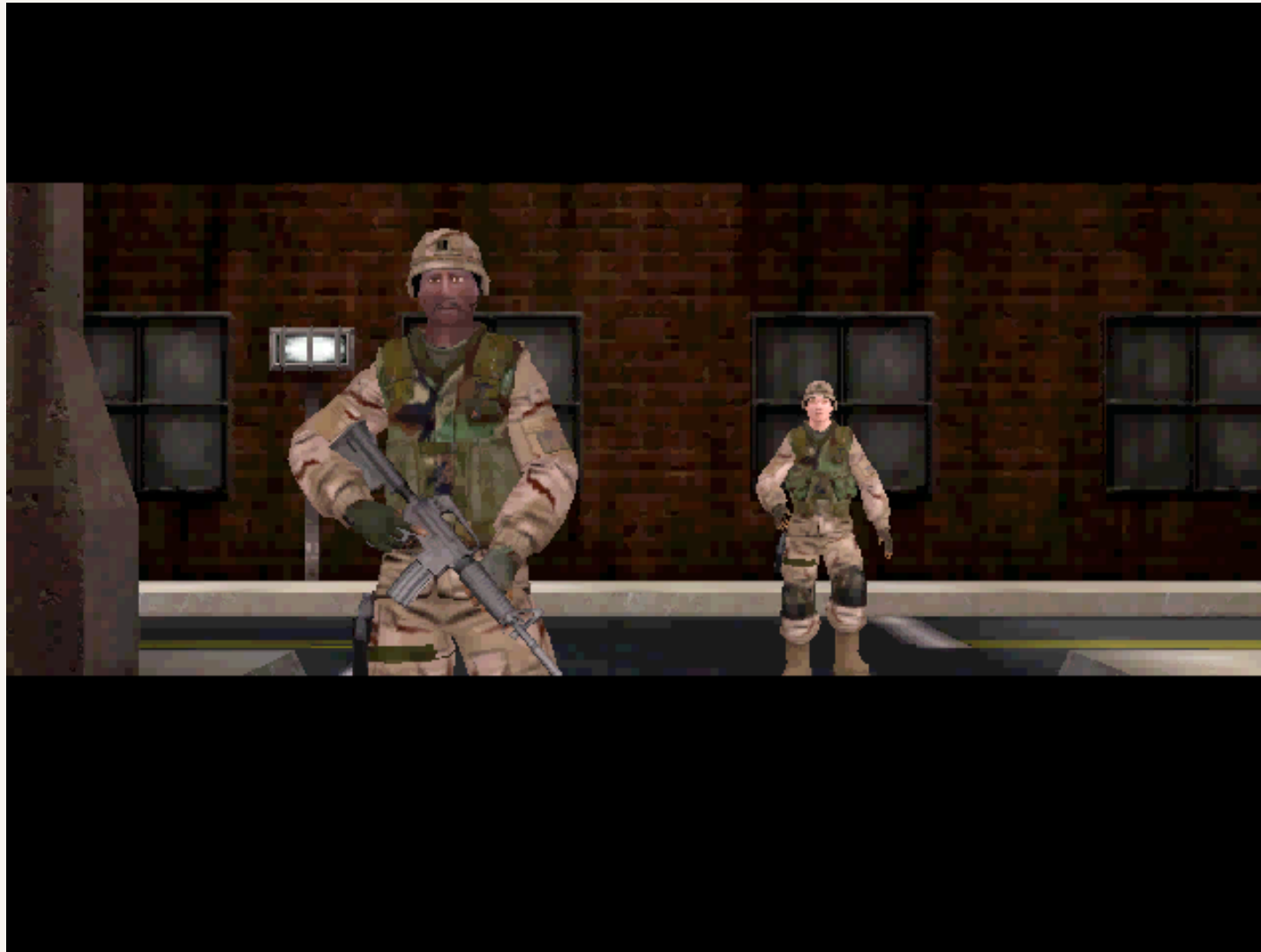


A form of digital entertainment in which the player influences a dramatic storyline through actions

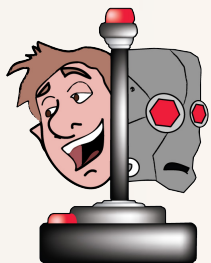
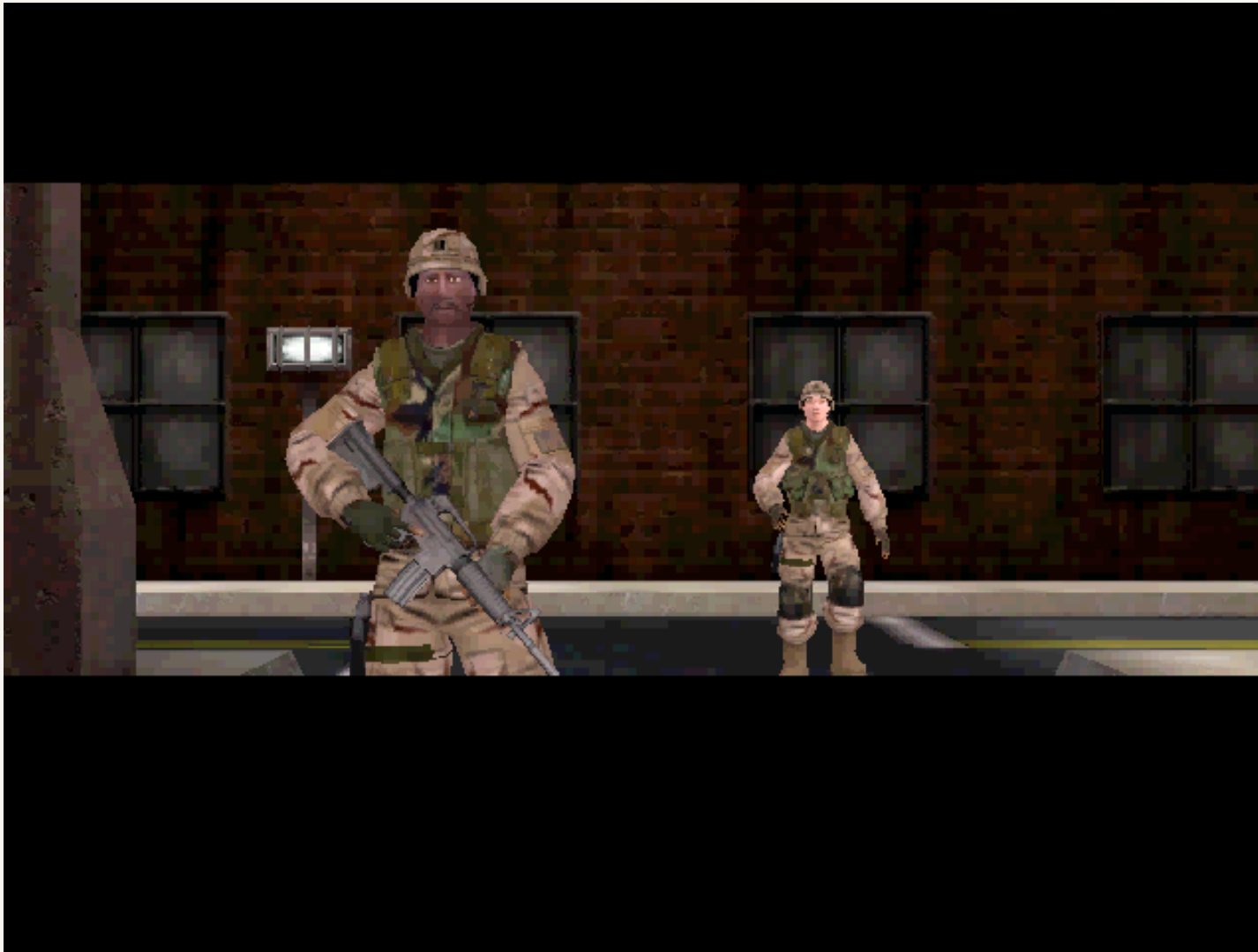
Interactive narrative



Cinematic reasoning



Cinematic reasoning



The science and art of storytelling

science

art

The science and art of storytelling

science

art

A sepia-toned photograph of a sailboat's deck. Four people are visible from behind, looking out over a body of water towards a distant city skyline. The city features a prominent tower, possibly a cathedral or church spire. The sailboat's mast and rigging are visible in the foreground. The word "Definitions" is overlaid in the center in a yellow, serif font.

Definitions

A sepia-toned photograph of a sailing ship's deck. In the foreground, the rigging and a large wooden wheel are visible. Several people, including a man in a hat and a woman, are standing on the deck, looking out towards the horizon. The sea is calm, and the sky is hazy. The overall mood is contemplative and historical.

Narrative

**The recounting of a temporally ordered sequence of events
with a continuous subject and constitutes a whole**

Definitions

A sepia-toned photograph of a sailboat's deck. Several people are visible, looking out at the sea. The image has a vintage, slightly grainy quality. The text is overlaid on this image.

Narrative

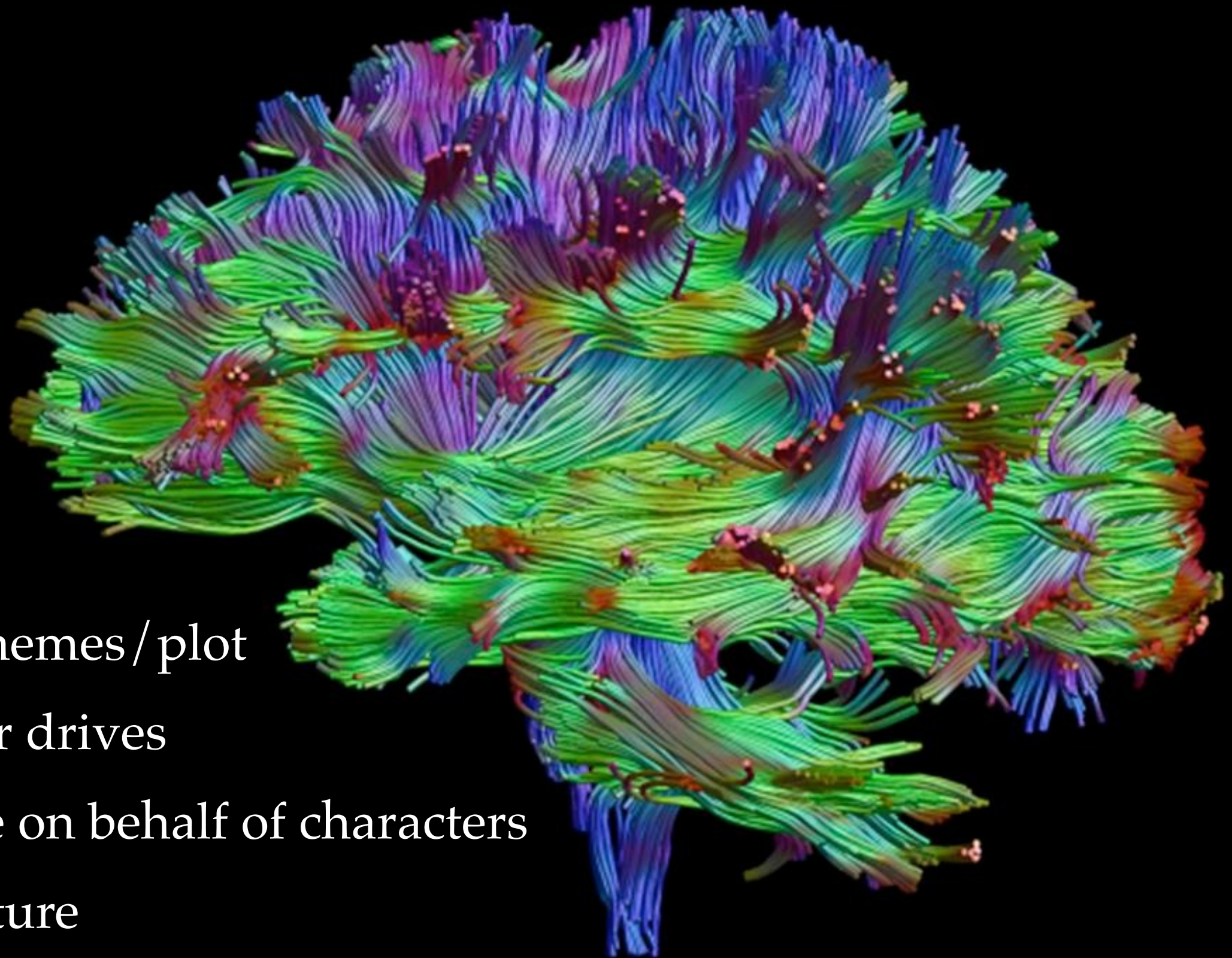
**The recounting of a temporally ordered sequence of events
with a continuous subject and constitutes a whole**

Definitions

Story

A narrative that breaches canonicity

Reading/watching a story is an active process



- Reconstruct themes/plot
- Infer character drives
- Problem solve on behalf of characters
- Predict the future
- Etc.

Transportation

- Someone is transported...
 - As a result of performing certain mental actions
 - Goes some distance away from the origin world
 - Some aspects of origin world become inaccessible
 - Traveler returns, possibly changed



Verisimilitude

* Green and Brock 2000

Suspense



The science and art of storytelling

science

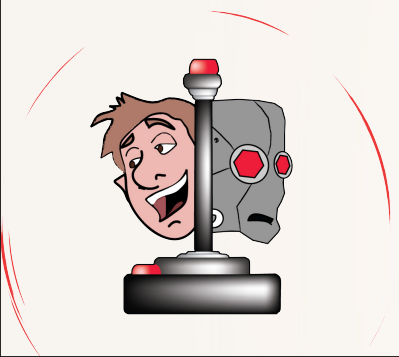
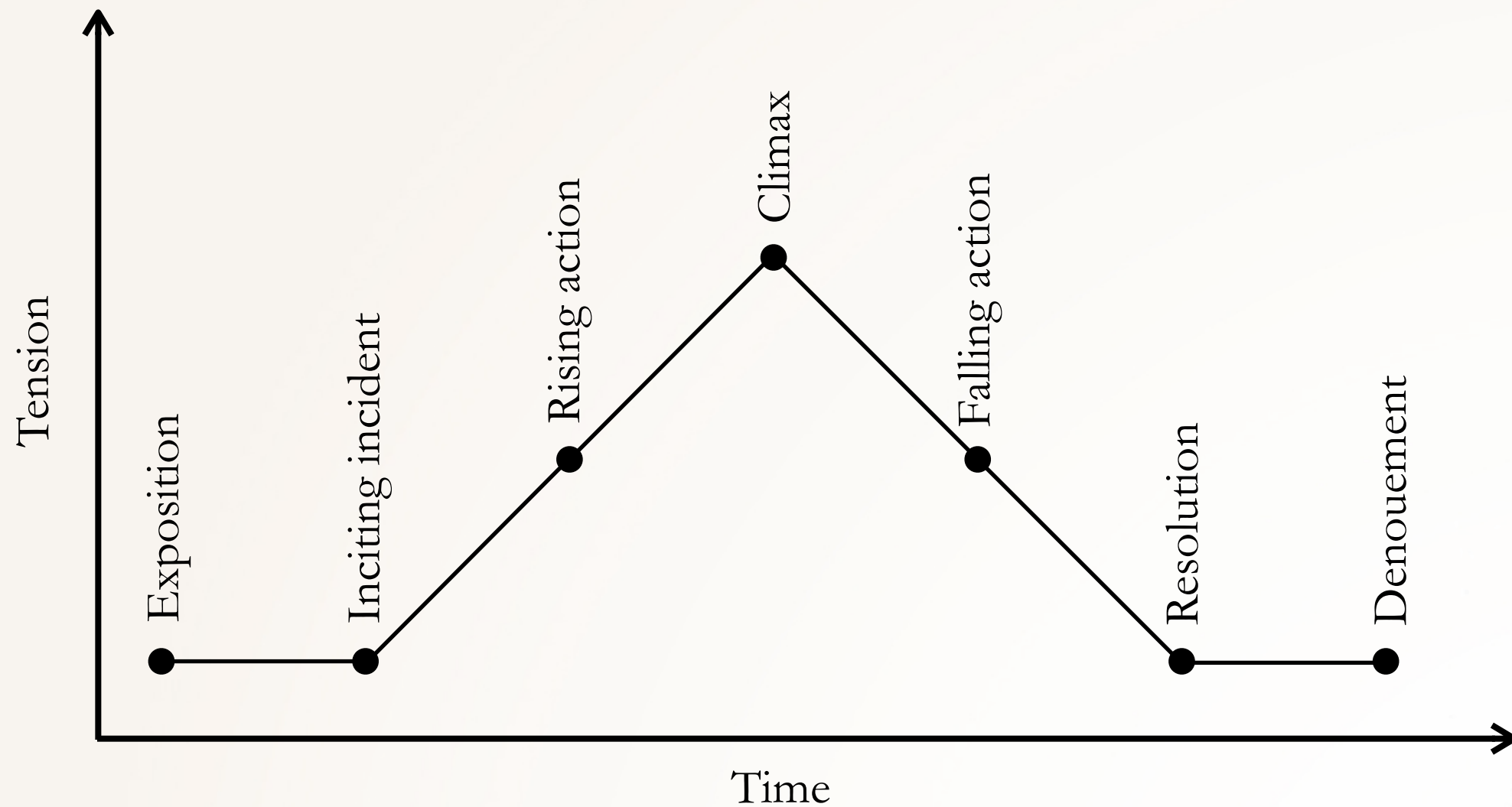
art

Beginning, middle, end

- Beginning:
 - Everything you need to know about the “rules” of the fictional world
- Middle:
 - Once upon a time there was ____.
 - Every day, ____.
 - One day ____.
 - Because of that, ____.
 - Because of that, ____.
 - Until finally ____.
- End:
 - Wrap up all the loose ends

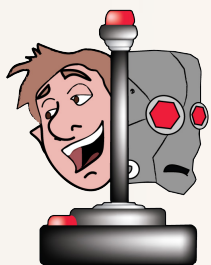


Dramatic arc



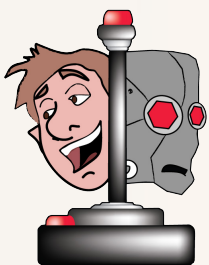
Disparities of knowledge

- Storytelling is not possible when all characters are omniscient
- Asymmetry of knowledge is required
- Suspense: you > protagonist
- Surprise: protagonist > you



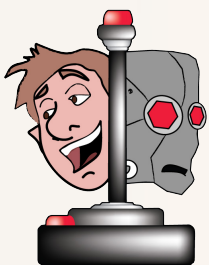
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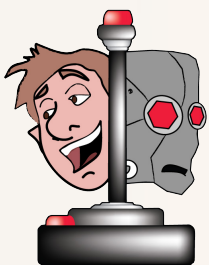
Time travel

- Events happen in chronological order
- Narratives don't need to be told in chronological order
- Flashback
- Flash forward



Setting Expectations

- Audience isn't just modeling character, they also model the (implied) author
- We have knowledge of familiar patterns and tropes
- Foreshadowing
- Chekhov's gun



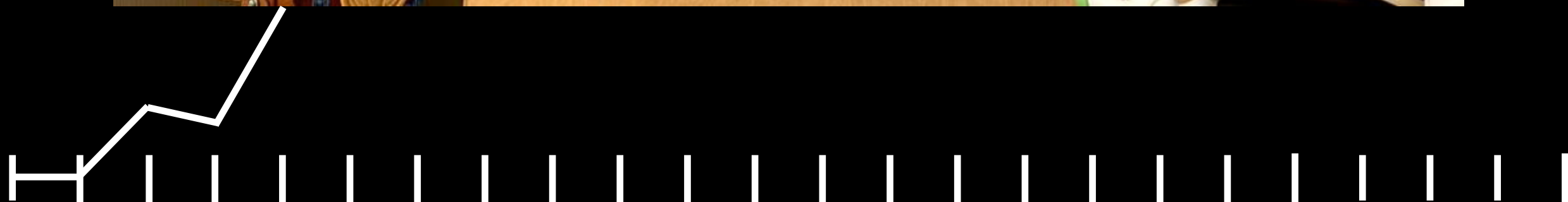
Don't tell... show





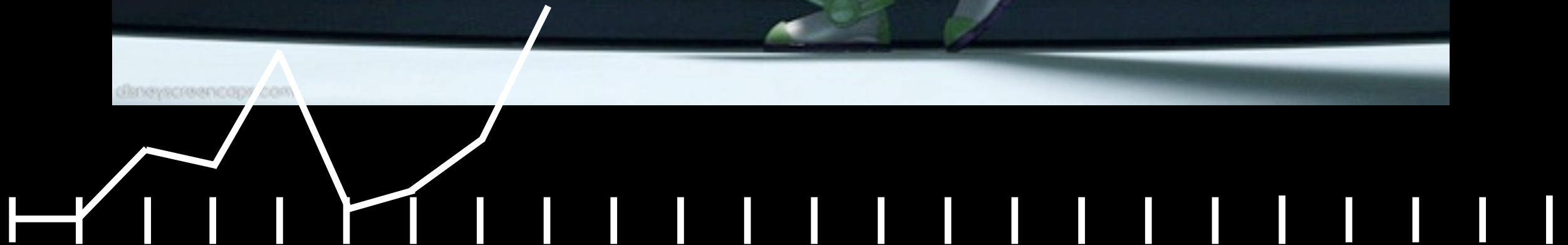
























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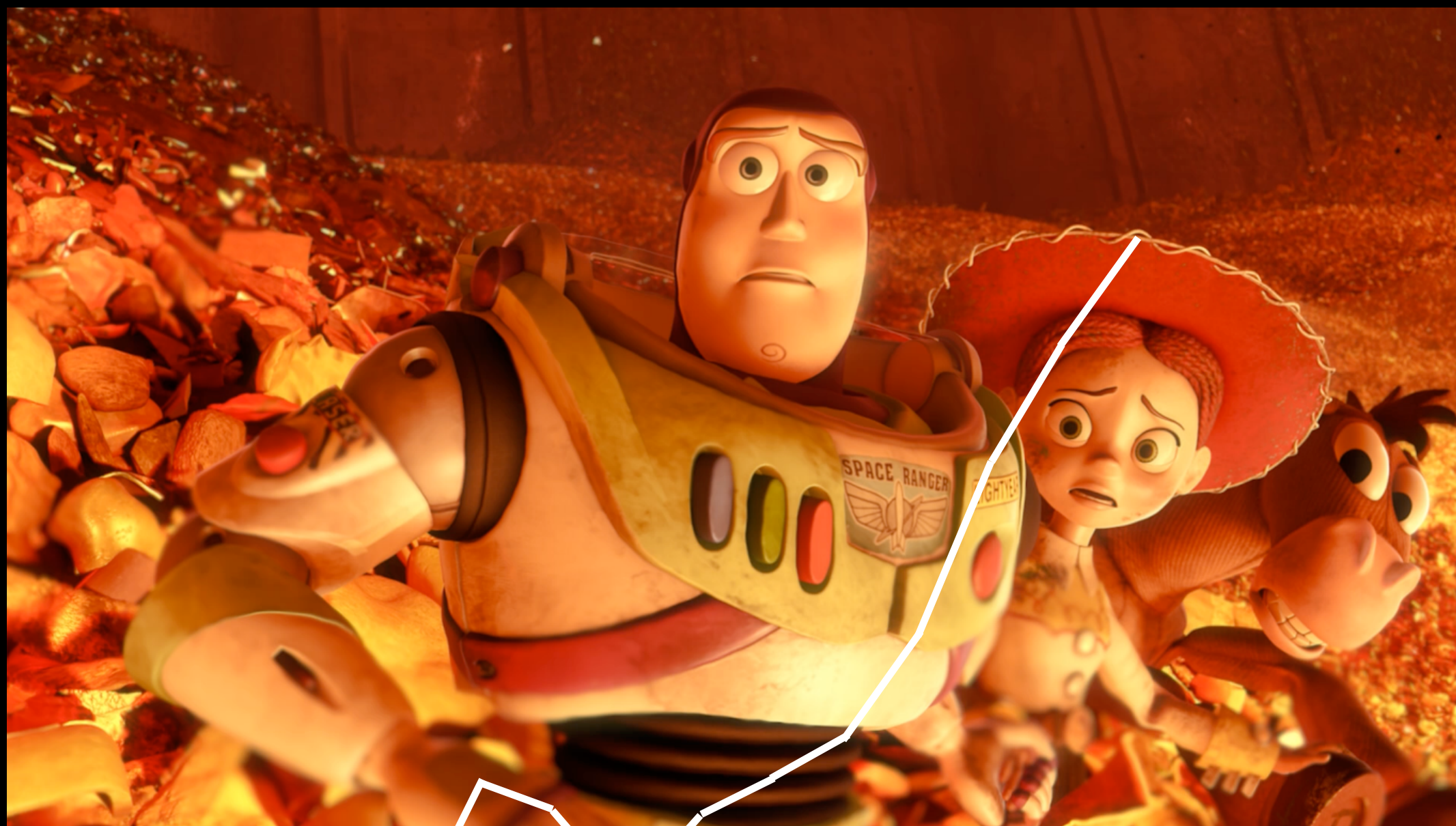






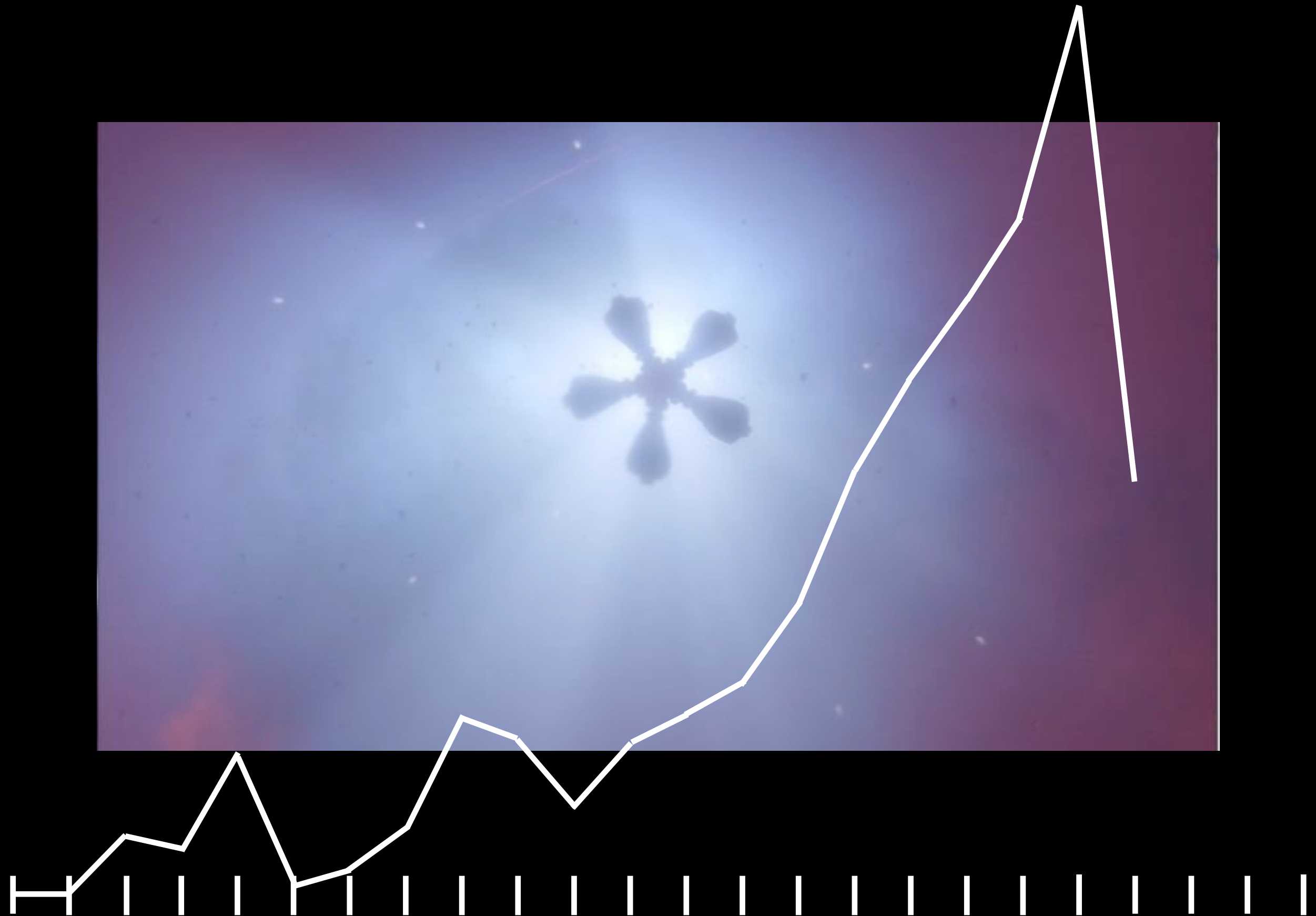
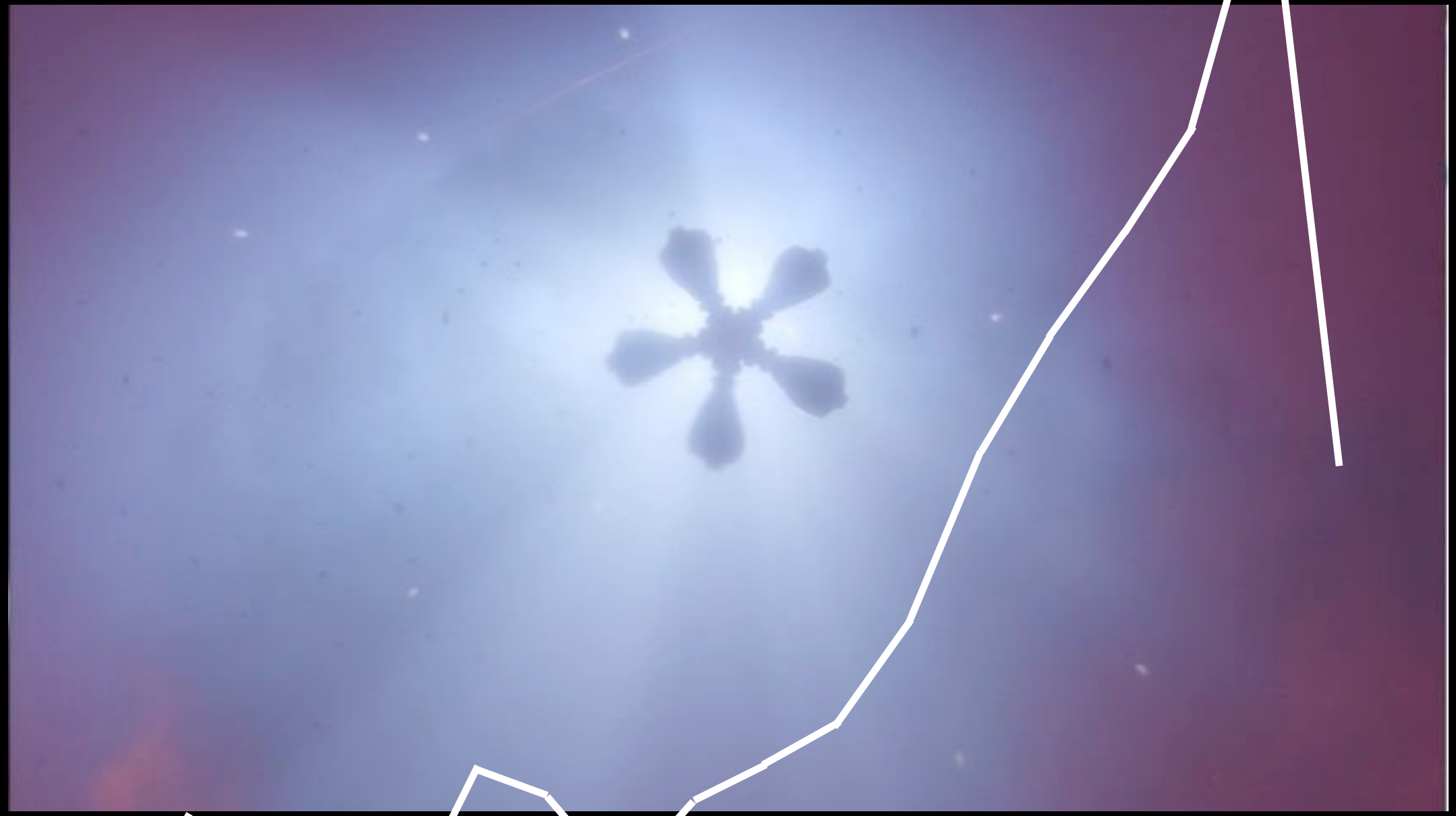
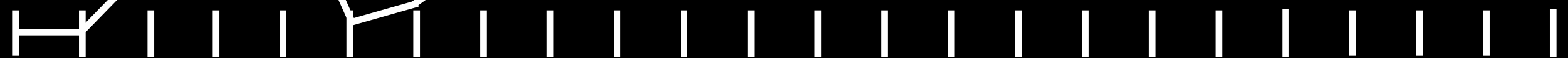
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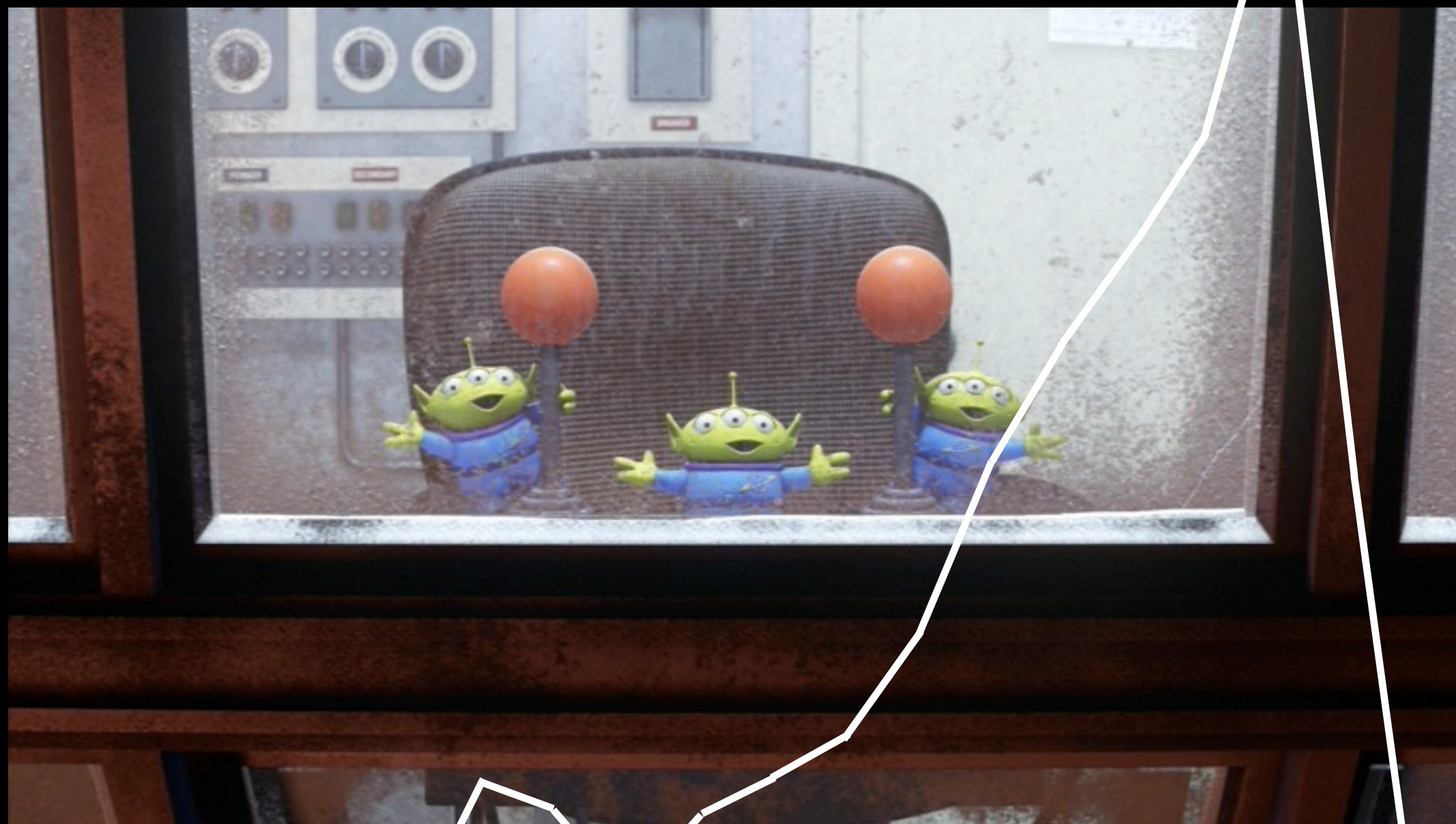
















Pixar rules of storytelling

Emma Coats (@lawnrocket)

<http://www.pixartouchbook.com/blog/2011/5/15/pixar-story-rules-one-version.html>



**WHAT IS YOUR CHARACTER
GOOD AT, COMFORTABLE WITH?**



**THROW THE POLAR OPPOSITE AT THEM.
CHALLENGE THEM.**

HOW DO THEY DEAL?

WHAT ARE THE STAKES?
GIVE US A REASON TO ROOT FOR THE CHARACTER.



**WHAT HAPPENS
IF THEY DON'T SUCCEED?**



GIVE YOUR
CHARACTERS
OPINIONS.

PASSIVE AND **MALLEABLE**
MIGHT SEEM LIKEABLE AS YOU WRITE,
BUT IT'S
POISON
TO THE AUDIENCE.

**SIMPLIFY.
FOCUS.
COMBINE CHARACTERS.**



**YOU'LL FEEL LIKE YOU'RE LOSING VALUABLE STUFF
BUT IT SETS YOU FREE.**

**YOU GOTTA IDENTIFY
WITH YOUR CHARACTERS.**

WHAT WOULD MAKE YOU ACT THAT WAY?



YOU CAN'T JUST WRITE 'COOL'.



COINCIDENCES

TO GET CHARACTERS INTO TROUBLE ARE GREAT.

A COINCIDENCE TO GET THEM OUT OF TROUBLE IS
CHEATING.

YOU GOTTA KEEP IN MIND WHAT'S
INTERESTING
TO YOU AS AN AUDIENCE, NOT WHAT'S **FUN** TO DO
AS A WRITER.



THEY CAN BE VERY DIFFERENT.

TRYING FOR
THEME
IS IMPORTANT,



BUT YOU WON'T SEE WHAT THE STORY IS
ACTUALLY ABOUT
UNTIL YOU'RE AT THE END OF IT.

**DISCOUNT THE FIRST THING THAT COMES TO MIND.
AND THE SECOND, THIRD, FOURTH, FIFTH --**

GET THE OBVIOUS OUT OF THE WAY.



SURPRISE YOURSELF.

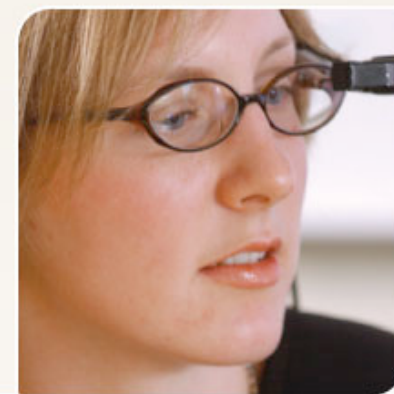
WHEN YOU'RE
STUCK
MAKE A LIST OF WHAT **WOULDN'T** HAPPEN NEXT.



LOTS OF TIMES THE MATERIAL TO GET YOU
UNSTUCK WILL SHOW UP.

**FINISH YOUR STORY.
LET IT GO EVEN IF
IT'S NOT PERFECT.
IN AN IDEAL WORLD
YOU HAVE BOTH,
BUT MOVE ON.
DO BETTER NEXT TIME.**



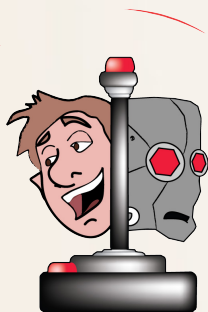
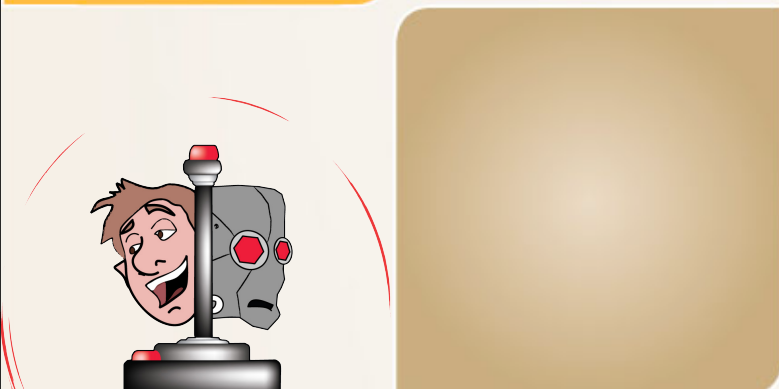


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